

CLAIMS

1. Use of at least one compound corresponding to the general formula (I) below:

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in which:

• R represents a group CH_2OH or CO_2X , and
• X represents a hydrogen atom or a monovalent
10 or divalent cation derived from an alkali metal, from
an alkaline-earth metal, from a transition metal or
from an organic amine, or an ammonium cation,
in a reducing composition for bleaching or permanently
reshaping keratin fibres, for complexing the metal
15 cations present in this composition and/or on the
keratin fibres onto which said composition is intended
to be applied.

2. Use according to Claim 1, in which the
20 monovalent or divalent cation is chosen from the group
consisting of monovalent alkali metal cations, divalent
alkaline-earth metal cations, divalent transition metal
cations and monovalent cations derived from organic
amines or from ammonium.

25

3. Use according to Claim 1 or Claim 2, in
which the compound(s) of formula (I) is(are) chosen
from the group consisting of gluconic acid, the alkali
metal salts thereof, the alkaline-earth metal salts
30 thereof, the transition metal salts thereof, the
organic amine salts thereof and the ammonium salts
thereof, and mixtures thereof.

4. Use according to any one of Claims 1 to
35 3, in which the compound(s) of formula (I) is(are)

chosen from the group consisting of gluconic acid, sodium gluconate, potassium gluconate, anhydrous calcium gluconate, calcium gluconate monohydrate, calcium borogluconate, magnesium gluconate, iron gluconate, manganese gluconate, zinc gluconate and copper gluconate.

5. Use according to Claim 1 or Claim 2, in which the compound(s) of formula (I) is(are) chosen
10 from the group consisting of mucic acid, glucaric acid and mannaric acid, the alkali metal salts thereof, the alkaline-earth metal salts thereof, the transition metal salts thereof, the organic amine salts thereof and the ammonium salts thereof, and mixtures thereof.

15 6. Use according to any one of the preceding claims, in which the compound(s) of formula (I) is(are) chosen from gluconic acid and mucic acid.

20 7. Use according to any one of the preceding claims, in which the compound(s) of formula (I) represent(s) from 0.001% to 10% by weight relative to the total weight of the reducing
25 composition.

30 8. Use according to any one of the preceding claims, in which the compound(s) of formula (I) represent(s) from 0.001% to 5% by weight relative to the total weight of the reducing composition.

35 9. Use according to any one of the preceding claims, in which the reducing composition comprises one or more reducing agents chosen from the

group consisting of reductones and the salts and esters thereof, sulphites and sulphinates.

10. Use according to any one of Claims 1
5 to 8, in which the reducing composition comprises one or more reducing agents chosen from the group consisting of thiols, the salts and esters thereof, sulphites and sulphinates.

10 11. Use according to Claim 10, in which the reducing agent(s) is(are) chosen from the group consisting of thioglycolic acid, thiolactic acid, cysteine and cysteamine, the salts and esters thereof.

15 12. Use according to any one of Claims 9 to 11, in which the reducing agent(s) represent(s) from 0.1% to 30% by weight relative to the total weight of the reducing composition.

20 13. Use according to any one of Claims 9 to 12, in which the reducing agent(s) represent(s) from 0.5% to 20% by weight relative to the total weight of the reducing composition.

25 14. Use according to any one of the preceding claims, in which the reducing composition also comprises one or more cationic or amphoteric conditioning polymers, in proportions of from 0.01% to 10% by weight and preferably from 0.05% to 5% by weight
30 relative to the total weight of said composition.

15. Use according to any one of the preceding claims, in which the reducing composition also comprises one or more nonionic, anionic, cationic
35 or amphoteric amphiphilic polymers, comprising a

hydrophobic chain, in proportions of from 0.05% to 20% by weight and preferably from 0.1% to 10% by weight relative to the total weight of said composition.

5 16. Use according to any one of the preceding claims, in which the reducing composition also comprises one or more surfactants, in proportions of from 0.01% to 40% by weight and preferably from 0.1% to 30% by weight relative to the total weight of said
10 composition.

15 17. Use according to any one of the preceding claims, in which the reducing composition also comprises one or more rheology modifiers other than the nonionic, anionic, cationic or amphoteric amphiphilic polymers, comprising a hydrophobic chain, in proportions of from 0.05% to 20% by weight and preferably from 0.1% to 10% by weight relative to the total weight of said composition.
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25 18. Use according to any one of the preceding claims, in which the reducing composition also comprises one or more acidifying or basifying agents, in proportions of from 0.01% to 30% by weight relative to the total weight of said composition.

30 19. Use according to any one of the preceding claims, in which the reducing composition also comprises one or more solvents chosen from the group consisting of water and mixtures composed of water and of one or more cosmetically acceptable organic solvents, this or these solvent(s) representing from 0.5% to 20% by weight and preferably from 2% to 10% by weight relative to the total weight of said
35 composition.

20. Use according to any one of the preceding claims, in which the reducing composition also comprises one or more adjuvants chosen from the group consisting of mineral or organic fillers, binders, lubricants, antifoams, silicones, dyes, matting agents, preserving agents and fragrances.

21. Use according to any one of the
preceding claims, in which the reducing composition is
a composition intended for bleaching or permanently
reshaping human keratin fibres and preferably the hair.

15 22. Reducing composition for bleaching or
permanently reshaping keratin fibres, comprising at
least one reducing agent, characterized in that it also
comprises at least one compound corresponding to the
general formula (I) below:

$$20 \quad R-(\text{CHOH})_4-\text{CO}_2X \quad (\text{I})$$

in which:

- R represents a group CH_2OH or CO_2X , and
 - X represents a hydrogen atom or a monovalent or divalent cation derived from an alkali metal, from an alkaline-earth metal, from a transition metal or from an organic amine, or an ammonium cation, with the proviso that, when the compound is gluconic acid or a salt thereof, said reducing agent is chosen from cysteamine and the salts and esters thereof, sulphites, sulphinates and reductones, with the exception of ascorbic acid, whereas, when the compound is glucaric acid, said reducing agent is not cysteine or a salt thereof.

23. Composition according to Claim 22,
characterized in that the monovalent or divalent cation
is chosen from the group consisting of monovalent
alkali metal cations, divalent alkaline-earth metal
5 cations, divalent transition metal cations and
monovalent cations derived from organic amines or from
ammonium.

24. Composition according to Claim 22 or
10 Claim 23, characterized in that the compound(s) of
formula (I) is(are) chosen from the group consisting of
gluconic acid, the alkali metal salts thereof, the
alkaline-earth metal salts thereof, the transition
metal salts thereof, the organic amine salts thereof
15 and the ammonium salts thereof, and mixtures thereof.

25. Composition according to any one of
Claims 22 to 24, characterized in that the compound(s)
of formula (I) is(are) chosen from the group consisting
20 of gluconic acid, sodium gluconate, potassium
gluconate, anhydrous calcium gluconate, calcium
gluconate monohydrate, calcium borogluconate, magnesium
gluconate, iron gluconate, manganese gluconate, zinc
gluconate and copper gluconate.
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26. Composition according to Claim 22 or
Claim 23, characterized in that the compound(s) of
formula (I) is(are) chosen from the group consisting of
mannonic acid, altronic acid, idonic acid, galactonic
30 acid, talonic acid, gulonic acid and allonic acid, the
alkali metal salts thereof, the alkaline-earth metal
salts thereof, the transition metal salts thereof, the
organic amine salts thereof and the ammonium salts
thereof, and mixtures thereof.
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27. Composition according to Claim 22 or
Claim 23, characterized in that the compound(s) of
formula (I) is(are) chosen from the group consisting of
glucaric acid, the alkali metal salts thereof, the
5 alkaline-earth metal salts thereof, the transition
metal salts thereof, the organic amine salts thereof
and the ammonium salts thereof, and mixtures thereof.

28. Composition according to Claim 22 or
10 Claim 23, characterized in that the compound(s) of
formula (I) is(are) chosen from mucic acid, mannaric
acid, altraric acid, idaric acid, talaric acid, gularic
acid and allaric acid, the alkali metal salts thereof,
the alkaline-earth metal salts thereof, the transition
15 metal salts thereof, the organic amine salts thereof
and the ammonium salts thereof, and mixtures thereof.

29. Composition according to Claim 28,
characterized in that the reducing agent(s) is(are)
20 chosen from the group consisting of reductones, thiols
and the salts and esters thereof, sulphites and
sulphinates.

30. Composition according to Claim 22 or
25 Claim 23, characterized in that the compound(s) of
formula (I) is(are) chosen from gluconic acid and mucic
acid.

31. Composition according to Claim 30,
30 characterized in that it comprises gluconic acid as
complexing agent and/or sodium sulphite and/or sodium
hydroxymethane sulphinate as reducing agent(s).

32. Composition according to Claim 30,
35 characterized in that it comprises mucic acid as

complexing agent and ascorbic acid and/or sodium sulphite and/or sodium hydroxymethane sulphinate as reducing agent(s).

5 33. Composition according to Claim 30, characterized in that it comprises mucic acid as complexing agent and thioglycolic acid and/or cysteine and/or lactic acid as reducing agent(s).

10 34. Composition according to any one of Claims 22 to 33, characterized in that the compound(s) of formula (I) represent(s) from 0.001% to 10% by weight and preferably from 0.001% to 5% by weight relative to the total weight of said composition.

15 35. Composition according to any one of Claims 22 to 34, characterized in that the reducing agent(s) represent(s) from 0.1% to 30% by weight and preferably from 0.5% to 20% by weight relative to the 20 total weight of said composition.

25 36. Composition according to any one of Claims 22 to 35, characterized in that it also comprises one or more constituents chosen from the group consisting of cationic or amphoteric conditioning polymers, nonionic, anionic, cationic or amphoteric amphiphilic polymers, comprising a hydrophobic chain, surfactants, rheology modifiers other than the nonionic, anionic, cationic or amphoteric amphiphilic 30 polymers, comprising a hydrophobic chain, pH modifiers and solvents.

37. Composition according to any one of Claims 22 to 36, characterized in that it also comprises one or more adjuvants chosen from the group

consisting of mineral or organic fillers, binders, lubricants, antifoams, silicones, dyes, matting agents, preserving agents and fragrances.

5 38. Process for bleaching or permanently
reshaping keratin fibres, comprising the steps
consisting in:

a) applying to the keratin fibres a
reducing composition according to Claims 22 to 37;

10 b) leaving the reducing composition to
stand on the keratin fibres for a time that is
sufficient to obtain the desired bleaching or permanent
reshaping;

15 c) rinsing the keratin fibres to remove the
oxidizing composition therefrom;

 d) washing the keratin fibres one or more
times, rinsing them after each wash, and optionally
drying them;

20 said process also comprising, between steps c) and d),
in the case of a permanent reshaping, the steps
consisting in: i) applying an oxidizing composition to
the keratin fibres; ii) leaving the oxidizing
composition to stand on the keratin fibres for a time
that is sufficient to obtain the desired reshaping; and
25 iii) rinsing the keratin fibres with water to remove
the oxidizing composition therefrom.

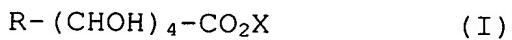
30 39. Device or "kit" for bleaching keratin
fibres, comprising at least two compositions A and B
intended to be mixed together to obtain a ready-to-use
reducing composition, characterized in that at least
one of the compositions A and B contains one or more
reducing agents and at least one of the compositions A
and B contains one or more compounds corresponding to
35 the general formula (I) below:



in which:

- 5 • R represents a group CH_2OH or CO_2X , and
 • X represents a hydrogen atom or a monovalent
or divalent cation derived from an alkali metal, from
an alkaline-earth metal, from a transition metal or
from an organic amine, or an ammonium cation,
10 with the proviso that, when the compound is gluconic
acid or a salt thereof, said reducing agent is chosen
from cysteamine and the salts and esters thereof,
sulphites, sulphinates and reductones, with the
exception of ascorbic acid, whereas, when the compound
15 is glucaric acid, said reducing agent is not cysteine
or a salt thereof.

40. Device or "kit" for permanently
reshaping keratin fibres, comprising firstly, either a
20 composition A or at least two compositions A' and B'
intended to be mixed together to obtain a ready-to-use
reducing composition, either a composition A or at
least two compositions A' and B' intended to be mixed
25 together to obtain a ready-to-use reducing composition
and, secondly, a ready-to-use oxidizing composition C
or at least two compositions D and E intended to be
mixed together to obtain a ready-to-use oxidizing
composition, characterized in that either composition A
30 or at least one of the compositions A' and B' contains
one or more reducing agents and either composition A or
at least one of the compositions A' and B' contains at
least one or more compounds corresponding to the
general formula (I) below:



in which:

- R represents a group CH_2OH or CO_2X , and
- X represents a hydrogen atom or a monovalent or divalent cation derived from an alkali metal, from an alkaline-earth metal, from a transition metal or from an organic amine, or an ammonium cation, with the proviso that, when the compound is gluconic acid or a salt thereof, said reducing agent is chosen from cysteamine and the salts and esters thereof, sulphites, sulphinates and reductones, with the exception of ascorbic acid, whereas, when the compound is glucaric acid, said reducing agent is not cysteine or a salt thereof.

- 15 41. Use of a composition according to any one of Claims 22 to 37, or of a process according to Claim 38, or of a kit according to Claim 39 or Claim 40, for bleaching or permanently reshaping human keratin fibres and, more especially, the hair.

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